



Final Project Closeout Report

For the

886 Cluster Closure Project

Revision 0

December, 2002

Remediation, Industrial D&D, and Site Services
Kaiser-Hill Company, LLC



Review for Classification/USE
Name: CJ FREIGHT - 4/24 -
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ADMIN RECORD

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Final Project Closeout Report 886 Cluster Closure Project

I. Introduction

The 886 Cluster was located on the east half of Rocky Flats Environmental Technology Site (RFETS), just south of Central Ave. between 9th and 10th Streets (see RFETS Plot Plan, Appendix 1, Article 1). The structures within the 886 Cluster consisted of the main facility, Building 886, which housed administrative office space and the Critical Mass Laboratory, Building T886A, an office trailer, Building 875, the air filtering facility for Building 886, the 875 Tunnel connecting Building 875 with Building 886, Building 880, a storage facility, Building 888A, a 13.8KVA power substation, and the 828 Pit. See the Cluster Map (Appendix 1, Article 2) for building locations and building additions. In general, the D&D effort required dismantlement and removal of interior equipment, radiological and chemical decontamination of interior surfaces, removal of all the cluster structures, supporting structures, and utilities, and site restoration.

The 886 Cluster Closure Project was completed in accordance with the Interim Measure/Interim Remedial Action (IM/IRA) Plan for the 886 Cluster (RMRS 1998); the RSOP for Facility Component Removal, Size Reduction, and Decontamination Activities (DOE 2002c); and the RSOP for Facility Disposition (DOE 2000b). This document summarizes the actions taken and the final condition of the Building 886 Cluster.

Building 886:

The primary building in the 886 Cluster was the Critical Mass Laboratory for RFETS. It was used to perform criticality experiments involving highly enriched uranium solutions, enriched uranium metal and solutions, plutonium metal, and low-enriched uranium oxide between 1965 and 1987, though after 1983 uranyl nitrate solutions were used exclusively. A small office addition was added to the northeast corner of the building in 1970, a storage vault, Room 102, was extended in 1980, and a small equipment room was added on the west wall of the building prior to 1986. Building 886 was contaminated with radiological hazards, uranium metal and highly enriched uranyl nitrate (HEUN), and chemical hazards, asbestos, lead and PCBs. There were no other radiological or beryllium hazards identified.

Building 886A:

This was a temporary office trailer installed on the east side of Building 886 in 1984 and tied into the northeast office section that had been added in 1970 (see above). There were no radiological hazards identified in T886A.

Building 875:

This was the air filtering facility for Building 886. All exhaust from Rooms 101 and 103 was routed through Building 875 where filter plenums cleansed the air with 99.997% efficient HEPA filters. Originally, the exhaust from Building 886 went through an outside exhaust filtering process located on the west side of Building 886 until Building 875 was completed in 1973. Radiological hazards and chemical hazards, including asbestos, were identified in Building 875.

An underground concrete tunnel, noted as the 875 tunnel, connected Building 875 with the west side of Building 886 and was used to route the exhaust ducts from Rooms 101 and 103 in Building 886 to the plenums in Building 875. Radiological hazards were identified in the exhaust ducts that ran through the tunnel to Building 875.

828 Pit:

A concrete pit constructed with Building 886 to provide holding tanks for upset conditions in the building or in the event the fire suppression system was activated. Radiological hazards were identified in the tanks within the 828 Pit.

Building 880:

This was a metal storage shed built in 1967 to support work in Building 886. A small amount of radiological hazard was identified in Building 880.

Building 888A:

This was the transformer substation that supplied power for the Building 886 Cluster.

II. Action Description

In 1996 the Uranyl Nitrate solutions were drained from all the systems in Building 886 and removed from the site leaving the building with only traces of Uranyl Nitrate. Following that activity the 886 Cluster Closure Project was completed in two parts. First, loose property removal, some equipment dismantlement, and fluid draining from equipment and piping systems was accomplished by Rocky Flats Closure Site Services (RFCSS). RFCSS is the Facility Management Subcontractor for that area reporting to the Remediation, Industrial D&D, and Site Services (RISS) Department of Kaiser-Hill, LLC (KH). The second part, D&D, was performed by Kaiser-Hill Construction (KHC) with project management and oversight performed by RISS.

In general the D&D work included removal of all equipment systems, building structures, utilities and all other associated structures such as stanchions, concrete driveways, and sidewalks within the Building 886 Cluster boundary. All piping and drain fields were removed to a minimum of 3' below grade. Those underground sewer lines, drain fields, electrical lines, phone lines/fiber-optic cables, below three feet and not contaminated were left in place. Contaminated process drain lines were removed entirely. All concrete was removed except the lower portion of the tunnel between Building 886 and Building 875 and the adjoining pit in Building 875. The only above grade structures left in place were the paved parking area north of the site and the storm water gauging station on the northeast corner of the site. In summary, the project consisted of asbestos abatement, decontamination, dismantling of systems and equipment, pre-demolition surveys, facility demolition, hazardous waste segregation, waste packaging and disposal, backfill, site grading, and site restoration.

Building 886:

Building 886 was the Critical Mass Laboratory. The original building was approximately 180' long and 57' wide. It was comprised of two main areas: 1) The north side, which contained the office area, mechanical room, control room, locker rooms, and a small laboratory area; and 2) The south side which contained the critical mass laboratory area. The critical mass laboratory area consisted of Room

101 where the critical mass experiments were conducted, Room 102, a storage area, and Room 103, which contained 10 tanks used for storage of HEUN. The HEUN would be pumped from Room 103 to 101 to conduct the criticality experiments.

The north side was primarily concrete filled cinder block construction, both on the exterior and interior walls, while the south side was cast-in-place concrete walls ranging from 16" to 5'-0" thick. The entire building had a metal truss roof and built up roofing. Over the years several additions were added to the building; an office area off the north east corner, Rooms 128, 129, 130, and 131, a small equipment room, 140, west of Room 106; and an expansion to Room 102 going to the east. The 102 addition was cast-in-place concrete lined on the exterior with cinder block.

Asbestos fibers were found in the block filler used on some of the concrete block walls which formed the office area, equipment, control, and locker rooms, and the interior side of the exterior concrete block walls of the original structure, excluding the concrete walls of the laboratory area. Samples taken in the additions added after 1969 did not indicate the presence of asbestos. Radiological hazards included uranium and highly enriched uranyl nitrate (HEUN) which was primarily confined to Rooms 101, 102, and 103. Room 103 also contained small amounts of Plutonium.

The block filler containing the asbestos fibers on the load-bearing walls was abated utilizing a hydrolasing process. The hydrolasing process to remove contaminants consisted of using high-pressure jets, up to 36,000 psi, contained in a 6" to 8" head that had a vacuum shroud to suck up the water and any contaminants along with dislodged pieces of the wall or floor. Asbestos abatement on non-bearing interior block walls was performed manually using sledges and pry bars. Containment tents were built around all of the asbestos removal activities and samplers were placed within the containment as well as outside the containment. There was no asbestos found on any of the sampler filters at any time during the course of the project.

Building 886 was actually demolished in two steps. Once the Pre-Demolition Survey (PDS) was completed and approved for the north side, Kaiser-Hill (K-H) requested that DOE and CDPHE approve demolishing that portion of the building prior to completing decontamination of the south side of the building. The PDS verified that the north side of the building was within free-release criteria and DOE / CDPHE approved the plan and demolition proceeded on the north side of Buildings 886 and Building 886A to a pre-designated point as defined in Contract Record, 3-13-02 (Appendix 2, Article 1). Additionally, 2 ½ weeks later in accordance with Contract Record 4-1-02 (Appendix 2, Article 2), demolition of the north side of the building was continued to a temporary bulkhead constructed approximately 3' north of the north wall of Room 103. See Appendix 3, Article 1 for the Phase 1 Pre-Demolition Survey Report.

Room 101 in the laboratory area at the south end of the building was where the criticality experiments were performed in an Assembly Hood. Substantial shielding was required to provide radiation protection during the criticality experiments, so the walls of the room were constructed with 4' and 5' thick, highly reinforced concrete. Most of the work with criticality experiments was performed in the Assembly Hood, but there was uranium contamination on some walls and floor area of the room which had to be removed before the building could be demolished and the debris released unrestricted.

The Assembly Hood was near the west wall of Room 101 and before any other work began the Hood was removed in pieces and placed in Department of Transportation (DOT) approved containers and shipped to the Nevada Test Site (NTS) as Low-Level Waste (LLW). Hereafter references to NTS shipments is understood to be LLW in DOT approved containers. The above floor ductwork supporting that equipment was also removed and shipped to NTS. The exhaust for the Assembly Hood went through the floor of Room 101, through the foundation wall and up into the tunnel between Building 886 and 875 where it tied into the main exhaust duct. The piece of duct that went through the floor was injected with foam to stabilize any contamination. Then the floor was saw cut and removed, the dirt under the floor excavated to expose the duct, and the duct was cut near the foundation, removed, wrapped with plastic, and shipped to NTS. Further into the project, while removing the exhaust duct from the tunnel, the rest of the under-floor duct was removed in the same manner and shipped to NTS.

There were two HEUN lines from Room 101 that ran through the 5' concrete wall and made a 90 degree turn into Room 103, and a Process Drain (PD) line went from Room 101 to the 828 Pit. The HEUN lines were filled with a resin material to contain contamination and cut close to the wall on both sides. Since they were sleeved through the concrete wall it was possible to remove them from the wall by making one cut at the 90 degree elbows and then pulling part of the line into Room 101 and the rest of the line into Room 103. Once removed the lines were wrapped in plastic and shipped to NTS. The PD line penetrated the floor near the west wall, turned and went through the foundation, and then underground to the 828 Pit. It was also filled with resin and removed in similar fashion as the under-floor duct was and shipped to NTS.

In Room 101, Uranium contamination was removed from the west wall and a portion of the south wall, around a platform that had contained an annular tank removed prior to this effort, by scrubbing, needle guns, or hydrolasing. Contamination on the floor was not removed. Instead the floor was cut in blocks with a concrete circular saw and removed with the room bridge crane and shipped to NTS. However, the saw could not get through the concrete floor in areas where the old concrete filled, contaminated trenches were located. As approved by DOE and CDPHE, reference Contact Record, 3-22-02 (Appendix 2, Article 3), those slabs of concrete were left in place. The surface was sprayed with fixative, covered with cardboard as a softener material, and finally with stainless steel plate on top of the cardboard bolted to the concrete before the building was demolished. When the rubble was removed, the plates and cardboard were removed allowing the concrete to be removed with heavy equipment. The contaminated concrete was shipped to NTS. Some pieces of the concrete floor were chipped off during removal and fell into the dirt below the floor. About 6" of dirt from under the floor was then removed, placed in a container, and shipped to NTS.

Room 102 was used for storage of material. The walls were uncontaminated, but the floor was contaminated with uranium. The contamination on the floor was removed using the hydrolasing process to the point that it could be released unrestricted.

Room 103 was the HEUN storage area. The storage tanks had been previously removed by RFCSS, but a stainless steel room was left in place. In order to get a

100% PDS in Room 103 the stainless steel room was removed and shipped to NTS. Room 103 was contaminated mostly in the area where a pit was located. The pit floor and walls were hydrolased to remove contamination, some of it being HEUN. Sampling indicated the pit floor met unrestricted release criteria and in accordance with Contact Record 3/20/02 (Appendix 2, Article 4), the pit was left in place for removal during demolition.

There were four HEUN lines that ran from the pit in Room 103 to the 828 Pit, and a PD line that ran under the floor of Room 103 from the wall on the east side of Room 103 to the 828 Pit. The PD was vented through the roof on the east side of the east wall of Room 103 and through the north wall of Room 103. The four HEUN lines were filled with resin to contain any contamination then removed during demolition of the floor all the way to the 828 Pit and shipped to NTS. The PD line and vents were also filled with resin, removed as the floor was removed, also all the way to the 828 Pit and shipped to NTS.

Some fixed contamination was found on the top surfaces of the roof trusses above Room 103. There was no contamination found on the under surfaces of either the roof deck or the trusses. The contamination was likely the result of removing the tanks under the earlier effort with RFCSS. After Room 103 was completely decontaminated and prior to the building being demolished, the roof was removed as prescribed by the Work Control Plan (Appendix 2, Article 5) and shipped to NTS.

There were also a few spots of uranium contamination in the hall connecting 101, 102 and 103 that were removed with the hydrolasing process.

Once all the walls and floors of the critical mass laboratory area on the south half of the building were decontaminated, except portions of the Room 101 floor previously discussed, a PDS was performed and the Phase 2, Part 1, PDSR (Appendix 3, Article 2) prepared and approved by DOE and CDPHE. The PDS verified that the laboratory area was within unrestricted release criteria and the demolition of the south side of the building could commence. The first demolition action was to fracture the 4' and 5' thick concrete walls in Room 101. Controlled Demolitions, Inc (CDI) was hired to structurally delaminate the concrete from the reinforcing bar and aggregate by use of explosives (also see Section VIII of this report). The explosives were detonated in two separate blasts. The first blast was the west and east walls to assure the methodology was sound and to gage the amount of explosives needed in the other walls and the ceiling. The next blast was the north wall, south wall, and the ceiling. As planned the walls and ceiling were fractured throughout but still standing. Demolition equipment then pulled the walls and ceiling to the ground.

Once the ceiling and walls of Room 101 were down the stainless steel and cardboard sheets were removed from the floor pieces that were left in place. Then the concrete pieces were carefully removed with a front-end loader and placed in a cargo container for shipment as LLW. During the process of removing the floor, small pieces of concrete were broken off and mixed in with the dirt under the floor. As a result, the top 6" of soil was removed and placed in a large bag that was put in a cargo container and also shipped as LLW.

Demolition proceeded on the rest of the south side of the building removing all the rest of the walls, floors (including the Room 103 pit floor), and foundations. The floor

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and pit floor were carefully removed in the area of the HEUN and PD lines that had been left in place so they could be removed and placed in cargo containers as LLW. Trenches were excavated between the building and the 828 Pit to remove the remainder of the HEUN and PD lines that were put in cargo containers and shipped to NTS. The above ground rubble, a mixture of concrete and steel, was taken to the approved off-site landfill at Erie, Colorado. In accordance with Contact Record, 4-1-02 (Appendix 2, Article 6), the floors and walls of Room 101, 102, and 103 meeting free-release criteria were placed in the on-site rubble pile.

Building 886A:

This facility was actually a temporary trailer attached to the northeast corner of Building 886 in 1984 to provide additional office space. The structure was approximately 24' wide x 70' long and was typical trailer construction with wheels and axles removed and skirting placed around the void under the floor. This area had no radiological hazards. Chemical hazards consisted of PCB light ballasts and circuit boards with lead and silver in the solder. These items were collected, placed in proper waste containers, and shipped to approved disposal or recycle facilities.

Building 875:

Building 875 was located to the southwest of Building 886. It housed two exhaust plenums that filtered all the discharged air from Rooms 101 and 103 of Building 886, and a small supply plenum that filtered incoming air. The building was approximately 55' x 60' and was constructed of pre-cast concrete "T" sections for both the walls and the ceiling. In the northeast section of the building was a pit and a tunnel connecting Building 875 with Building 886. The pit, also the entrance to the tunnel, was cast-in-place concrete and housed a fire system deluge tank to capture any water from the plenums should the fire system be activated.

Of the two exhaust plenums, the east one had never been used and was not contaminated; the west one was used extensively since 1973 and had uranium contamination present in the first and second stages of the plenum, but the third, fourth, and fifth stages were not contaminated. The small supply plenum in the building was not contaminated. The contaminated plenum was dismantled beginning with the fifth stage and working toward the first stage. Dismantlement of all five stages was completed within containment and surveyed before being released as sanitary waste or shipped to NTS. The unused exhaust plenum and the supply plenum were surveyed, demolished with the building, and sent to the sanitary landfill.

The exhaust duct from Rooms 101 and 103 of Building 886 that was piped to Building 875 through an underground tunnel was also contaminated with uranium. The exhaust duct was dismantled from Building 886 toward Building 875 keeping the exhaust fans active to assure good airflow to keep the contamination contained within the exhaust duct until it was removed. As sections were cut away from the main trunk they were wrapped in plastic and disposed of as Low Level Waste and shipped to NTS.

Prior to demolishing Building 875, the pit containing the deluge tank was covered with grating and plywood to protect the tank during the building demolition. Once Building 875 was demolished the deluge tank was easily removed from the pit with a crane. The deluge tank was there to collect fire sprinkler water from the exhaust plenums if ever there was a fire in the building. The tank was filled with raschig rings

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for criticality control; however the fire deluge system was never activated and the tank was thought to be uncontaminated. As a precaution (survey inaccessibility), the tank was handled as internally contaminated. The exterior was surveyed to validate there was no external contamination.

Once the PDSR, Phase 2, Part 2 (Appendix 3, Article 3), was approved by DOE and CDPHE, Building 875 was demolished. The tank was successfully removed from the pit following building demolition, and with the raschig rings left in place the tank was shipped to NTS. The Pre-Demolition Survey performed in the tunnel validated that it met unrestricted release criteria. Therefore, the roof of the tunnel, which was just at or slightly below the three-foot* level, was removed and placed in the on-site concrete rubble pile. The remainder of the tunnel was filled with dirt, compacted to 90% compaction, and left in place.

828 Pit:

The 828 Pit was located on the west side of Building 886. It was approximately 12' wide, 16' long, and 12' deep, constructed entirely of cast-in-place concrete. The pit served as a collection point for process drains from Rooms 101 and 103 that were contaminated with HEUN, and to collect sprinkler water in the event the fire protection system was activated. The process drains tied into two raschig ring filled tanks that occupied the pit. The tanks were removed in tact with the raschig rings inside and shipped to NTS.

Over the years the 828 pit inadvertently filled with ground water. The water was sampled, pumped into a tanker trailer, and disposed of through the Central Waste Treatment Facility, Building 891, due to slightly elevated activity above the unrestricted release limit. This was also the case during demolition of Building 886 and the 828 pit, and none of the water was released to the storm run-off system. Elevated activity, however, was not found on the inner surface of the pit. In accordance with Contact Record, 5-17-02 (Appendix 2, Article 7), extra measures were taken to ensure contaminated concrete or soil was not left in place or sent to the off-site landfill or on-site rubble pile. The pit was removed in sections as large as possible, placed on the surface to dry, and then surveyed on the soil side of the concrete. It was discovered that over the years the bottom of the pit had weakened considerably and it disintegrated into small pieces when removed. Typical surveys would be ineffective on the disintegrated floor so it was sampled as if it were dirt or gravel. Additionally, once the pit was removed the dirt under the pit and several areas beside the pit were sampled for radiological contamination. All surveys and samples taken on the concrete and soil were within unrestricted release criteria, therefore, the concrete was placed on the on-site rubble pile with a small percentage (mostly reinforcing bar) sent to the off-site landfill. The hole was backfilled with native soil that had been taken out along with imported soil to bring the area to proper grade.

As previously mentioned the PD and HEUN waste lines that flowed into the pit from Building 886 were removed and shipped to NTS. During excavation of the pit a foundation drain was discovered that originated at Building 875. It was surveyed for radiological contamination, found to be within unrestricted release criteria and left in place. An old drawing also indicated the existence of an additional line, presumably overflow, from the pit to a storm drain to the northwest of the pit. While removing the

pit a trench was dug all the way around it several feet out, but that line or any others not already discussed were not found.

Building 880:

Building 880 was a steel-frame metal skin storage building 40' long x 20' wide located on the south side of Building 886 (see map, Appendix 1). The foundation was a monolithic thickened edge slab with a 6" thick floor and thickened edge 1'-3" wide and 1'-6" high. The building was used for storage of various pieces of equipment and supplies. One small section of the metal skin in the northeast corner of the building was found to have slightly elevated radiological contamination that was removed and placed in a waste crate for shipment to NTS. The rest of the building was within unrestricted release criteria and, in accordance with Contact Record, 6-19-02 (Appendix 2, Article 8), was demolished prior to the final issue of the PDSR.

Building 888A:

This building was the Substation that reduced the 13.8-kva-line voltage to 440 v. building power. The Substation consisted of an "H" frame with the line switching components, a two-section step-down transformer, one side for Building 886 and other for Building 875, a concrete pad, cinder block wall, and fencing. All were removed entirely near the end of the project.

Hydrolasing Drums:

The hydrolasing process to remove the block filler containing asbestos fibers and contamination on walls and floors generated seventy (70) 55-gallon drums of waste containing substantial amounts of liquid. All the drums were removed from the Building 886 site to Building 883 to properly prepare and dispose of them. Preparation of the drums included removing any liquids, adding a solidification agent, and then rolling the drums until there are no free liquids present. The drums are then sent to the proper disposal site as noted in Section VII.

III. Verification That Action Goals Were Met

Five action objectives were established for the 886 Cluster Removal Project prior to beginning the demolition:

- *Decontamination of the facilities (as necessary) to support release for decommissioning per site approved procedures.*

The facilities were decontaminated to free-release standards and placed in the off-site landfill or on-site rubble pile. It was not possible to decontaminate some of the structure components, i.e. concrete floor in Room 101, the ceiling of Room 103, and the west side exhaust plenum in Building 875, therefore, these structure components were disposed of as LLW.

- *Decommissioning the 886 Cluster facilities in accordance with RFCA and applicable or relevant and appropriate requirements.*

RFCA and other relevant requirements were complied with throughout the project with the exception that demolition of the north part of Building 886 and T886A was

started before the Demolition Permit was received from Colorado State authorities. Work was stopped as soon as it was discovered the permit had not been received.

- *Complete decontamination and decommissioning activities in a manner that is protective of site workers, the public and the environment.*

Decontamination and decommissioning activities were completed within regulatory requirements. Some examples include: continuous air sampling, tent construction inside Building 886 to control asbestos migration; rooms were sealed during manual decontamination and/or hydrolasing; a tent construction around the entire west plenum in Building 875 prior to dismantlement; and application of a wet curtain around the perimeter of exterior Room 101 Criticality Lab to control dust during the introduction of explosives and delamination, as well as, utilizing wet methods, via fire hydrant and hoses, to control dust during demolition.

- *Demolish the 886 Cluster facilities structures, utilities and process lines to 3' below grade.*

All concrete from the 886 Cluster was removed except the lower portion of the tunnel between Building 886 and Building 875 and the adjoining pit in Building 875. The roof of the tunnel, somewhat below the 3' level was removed while walls and floor were left in place and the tops of the pit walls in Building 875 were removed to 3' below grade.

All utilities were removed to 3' below grade. Section IX provides a list of uncontaminated utilities that were left in place and the approximate depth of those utilities. All the Process Drains and HEUN lines were suspected to be contaminated, therefore, all were removed and shipped to NTS.

- *Backfill subsurface structures with clean fill and coordinate with Environmental Restoration for characterization of cluster slabs and concrete from the 828 Pit, as well as, sampling and analysis of native soils under the former building slabs and reclamation of the site by re-contouring and revegetation.*

With the approval of Environmental Restoration, DOE, and CDPHE all dirt was left on site except 6" of dirt that was under the floor of Room 101 in Building 886. That dirt had been contaminated while removing the contaminated slab. All other dirt on the site was below the Tier II action level and allowed to be put back in the excavations.

IV. Verification of Treatment Process

Not applicable to this project.

V. Radiological Analysis

See Appendix 3 of this document containing the following Pre-Demolition Survey Reports (PDSR):

- 886 Cluster – Phase I Closure Project (Buildings 886, T886A, 888, 888A, 875)
Revision 0, dated July 10, 2001 (Appendix 3, Article 1)
- Building 886
886 Closure Project – Phase 2, Part 1 PDSR
Revision 0, dated April 1, 2002 (Appendix 3, Article 2)
- Building 875, 875 Tunnel and Building 880
886 Closure Project – Phase 2, Part 2 PDSR
Revision 0, dated June 26, 2002 (Appendix 3, Article 3)

VI. Demolition Survey Results

The Air Quality Management (AQM) program conducted Performance Monitoring for Radionuclides (PM-Rad) during B-886 demolition in accordance with the Integrated Monitoring Plan (IMP). The IMP prescribed that a 10-sampler network surrounding the Industrial Area be operated on a weekly sampling schedule. Alpha activity in samples was measured following a 96 hour hold to allow for decay of radon progeny; results are detailed in Table 1. Concentrations were compared to action levels defined through the IMP: action level 1 equaled 0.002 picocuries per cubic meter (pCi/m³) and correlated with 1 millirem (mrem) annual dose to a public receptor; action level 2 equaled 0.01 pCi/m³ and correlated with 5 mrem annual dose.

PM-Rad results were consistent with baseline activity during demolition of uncontaminated structures. No activity at or exceeding action level 1 was observed. No significant contribution to off-site dose is expected as a result of this demolition, based on the monitoring results.

PM-Radiological survey results are presented in Table 1, below, and are plotted in Figure 1 (Appendix 4, Article 1). Figure 2 (Appendix 4, Article 2) shows the locations of samplers relative to the Industrial Area.

Table 1. Alpha Concentration by Sampler Location and Sample Period (pCi/m³)

	3/13/02	3/20/02	3/27/02	4/3/02	4/10/02	4/17/02	4/24/02	5/1/02	5/8/02	5/15/02	5/22/02
S-103	-0.000607	0.00119	0.001076	0.001629	0.000873	0.001107	0.001294	0.001697	0.000499	0.000769	0.001124
S-104	0.000477	0.000866	0.001145	0.000745	0.001105	0.001015	0.000389	0.001219	0.001310	0.000938	0.001161
S-106	8.32E-05	0.001084	0.001727	0.001444	0.000470	0.001036	0.001370	0.000238	0.000955	0.000280	0.000726
S-114	-0.000390	0.000578	0.000934	0.001158	0.000883	0.000746	0.001739	0.000782	0.000354	0.001305	0.000451
S-116	0.001366	0.001108	0.000875	0.001687	0.000796	0.000858	0.001185	0.001257	0.000999	0.000834	0.000806
S-119	0.000908	0.000978	0.001164	0.001170	0.000368	0.000212	0.000733	0.000499	0.000879	0.000745	0.001069
S-121	0.000000	0.000921	0.000440	0.001569	0.000342	0.000863	0.000872	0.000978	0.001201	0.000998	0.000927
S-123	0.000432	0.001068	0.001457	0.001600	0.000811	0.000814	0.001045	0.000757	0.000923	0.001552	0.000519
S-205	0.000602	0.000632	0.001190	0.001479	0.000717	0.000189	0.001334	0.000844	-0.000265	0.001001	0.001007
S-212	0.000849	0.001592	0.000463	0.000778	0.001262	0.000509	0.001272	0.000967	0.000807	0.000362	0.000911

NOTES:

- Concentrations are in picocuries per cubic meter of gross alpha activity (pCi/m³)
 - Sampler map available in Acrobat document "perf_monitoring_rad_net.pdf"
 - Date is the first day of the 1-week sample period
 - Active demolition occurred during sample periods 4/10/02 and 4/17/02
- Action Level 1 (1 mrem at fenceline, annual basis) equals 0.002 pCi/m³

VII. Waste Stream Disposition

1. Sanitary Disposal	
Disposal Site:	Front Range Landfill, Erie, Colorado
Waste Volume (m ³):	3835 Cubic yards
Waste Weight (tons):	2420 tons
Additional Information:	Above grade building debris
2. Hazardous Disposal	
Disposal Site:	Kettleman Hills Facility, Kettleman City, CA or Bethlehem Apparatus Co, Hellertown, PA
Waste Volume (m ³):	Minor amounts
Additional Information:	Electronic circuit boards, thermostats, exit signs, batteries, fluorescent light bulbs and any other RCRA hazardous components were removed and taken for combination with like waste streams for disposal.
3. TSCA Waste Disposal	
Disposal Site:	Salesco, Phoenix, AZ; Clean Harbors Deer Park, Deer Park, TX; or BFI Tower Rd. Landfill, Commerce City, CO
Waste Volume (m ³):	0.132 m ³
Additional Information:	PCB ballasts were removed and packaged for disposal.
4. Asbestos Waste Disposal	
Disposal Site:	Kettleman Hills Facility, Kettleman City, CA
Waste Volume (m ³):	265 m ³
Additional Information:	Friable asbestos including the hydrolasing waste from removal of the skimcoat.
5. Low-Level Waste Disposal	
Disposal Site:	Nevada Test Site, Nevada
Waste Volume (m ³):	187 m ³
Additional Information:	Miscellaneous decommissioning and demolition debris
6. Low-Level Mixed Waste Disposal	
Disposal Site:	Envirocare of Utah Inc., Salt Lake City, UT
Waste Volume (m ³):	0.865 m ³
Additional Information:	Miscellaneous decommissioning and demolition waste
7. Low-Level TSCA Waste Disposal	
Disposal Site:	Nevada Test Site, Nevada
Waste Volume (m ³):	71 m ³
Additional Information:	Low-Level PCB Bulk Product waste
8. TRU Waste Disposal	
Disposal Site:	WIPP, Carlsbad, NM
Waste Volume (m ³):	2.32 m ³
Additional Information:	Glovebox and associated waste
9. Recycled Material	
Recycle Facility:	RFETS Concrete Recycling Staging Pile – 980
Waste Volume (m ³):	2171 m ³
Additional Information:	Concrete for on site backfilling
10. Property Disposition	
Receiver Locations (major items only):	N/A

VIII. Deviations From the Decision Document

The Interim Measure/Interim Remedial Action (IM/IRA) Plan for the 886 Cluster Project, RF/RMRS-97-135, Rev. 0, 7/30/1998, served as the Decision Document for decontamination, decommissioning and demolition activities associated with the 886 Cluster, except for the 886 slab. There were three deviations from this decision document, all of which were approved by DOE and CDPHE. These deviations are outlined below with the associated contact records in Appendix 2 and notifications and approval letters in Appendix 5.

- In the Scope section of the IM/IRA it states that "utilities will be capped at ground surface but not removed." Due to a change in contract language between Kaiser-Hill and DOE, all utilities were removed to three feet below grade. If a utility line had radiological contamination, it was removed to the point where contamination was no longer detected.
- In January 2002, a Notification letter (Appendix 5, Article 1) was submitted in accordance with the Rocky Flats Cleanup Agreement Standard Operating Protocol (RSOP) for Component Removal, Size Reduction and Decontamination Activities, to request the approval to remove contaminated portions of Building 886 slab, prior to building demolition. CDPHE approved this request on January 31, 2002 (Appendix 5, Article 2). Two contact records (Appendix 2, Articles 3 and 4) were later submitted in March 2002, documenting changes to this RSOP Notification letter.
- In April 2002, a Notification letter (Appendix 5, Article 3) was submitted in accordance with the Rocky Flats Cleanup Agreement Standard Operating Protocol (RSOP) for Facility Disposition, to request the use of explosives to demolish the walls and ceiling of room 101 in Building 886. CDPHE approved this request on April 8, 2002 (Appendix 5, Article 4).

IX. Description of Site Condition at End of Decommissioning

All above ground buildings and other structures, concrete pads, roadways and walkways, overhead steam lines, condensate lines, air lines, alarm lines, and electrical lines along with the supporting stanchions and power poles have been removed. The only above ground structures left in place is the original paved parking area directly north of Building 886, water runoff control ditches, the gauging station in the northeast corner of the site, and a tree. The site was filled and graded to prevent ponding with 5" to 6" of topsoil and planted with native grasses.

All the building floors, foundations (including footings), and the top of the tunnel between the west side of Building 886 and Building 875 were removed. The only concrete left in place was the sides and floor of the underground tunnel including the pit in the northeast corner of Building 875. The walls of the pit in Building 875 were removed to a minimum of 3' below grade. Since the top of the tunnel was 3' below grade, none of the walls were removed. The remainder of the tunnel and pit was filled with good backfill and compacted to 90% compaction ratio.

Underground contaminated process drain lines and HEUN lines were removed entirely. All other piping and drain fields were removed to a minimum of 3' below grade. Those underground sewer lines, drain fields, electrical lines, phone lines/fiber-optic cables, below three feet and not contaminated were left in place. Specifically, the underground lines left in place are as follows:

- 4" Sanitary sewer line from the midpoint on the west side of Building 886 to approximately the midpoint between Building 886 and Building 865, then turns north to a manhole in the driveway leading to Building 865 where it was disconnected and grouted shut. Approximately 6' deep.
- 6" Fire Water line and 3" Domestic Water line run together from the midpoint of the west side of Building 886 due west to a PIV located near the fence line of Building 865 where they were disconnected and capped. Both are approximately 5'-6" deep.
- 6" Fire Water line from northwest corner Building 875 building line due west to main 10" supply line running north/south along old fence line. Approximately 6' deep.
- 6" Fire Water line from midpoint on the east side of Building 875 around the south side of the building to the 10" supply line same as above. Approximately 6' deep.
- Foundation drain from Building 875 north side midpoint due north. Termination point not known or shown on any drawings. Line was approximately 8' deep.
- A bank of conduits in concrete from the 888A Transformer station to underground concrete junction box approximately 30' due south of the transformer. Concrete junction box removed, but the bank of conduits left in place approximately 4' deep. One bank of conduits in concrete continued south from the junction box to Building 875, and another bank continued west from the junction box to Building 886.

Note that all the lines listed above were removed with the building foundations to a point 4' to 5' from the edge of the foundations.

Above information on locations of the lines is approximate. Detailed locations can be obtained from K-H Environmental Restoration Department from GPS surveys conducted to locate end points of underground piping.

X. Dates and Duration's of Project Activities

Beginning in 1998 and continuing through September 2001 loose property removal, and some equipment dismantlement, decontamination, and residual fluid draining was accomplished by Rocky Flats Closure Site Services (RFCSS). RFCSS is the Facility Management Subcontractor for that area reporting to the Remediation, Industrial D&D, and Site Services (RISS) Department of Kaiser-Hill (KH). In November 2001 Kaiser-Hill Construction (KHC) commenced the actual D&D project with project management performed by RISS. Following are the dates and duration of the key activities for the 886 Closure Project D&D contract:

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- | | |
|-------------------------------------|---------------------------------------|
| • Mobilization | Nov. 5, 2001 through Dec. 26, 2001 |
| • Strip-Out | Nov. 14, 2001 through May 7, 2002 |
| • Asbestos Abatement | Nov. 16, 2001 through March 15, 2002 |
| • Decontamination | Jan. 12, 2002 through April 2, 2002 |
| • PDS* – Phase I | March 13, 2002 through March 14, 2002 |
| • PDS* – Phase II, Part 1 | March 19, 2002 through March 28, 2002 |
| • PDS* – Phase II, Part 2 | April 4, 2002 through May 16, 2002 |
| • Demolition – Phase I | March 12, 2002 through April 2, 2002 |
| • Demolition – Phase II, Part 1 | April 8, 2002 through April 20, 2002 |
| • Demolition – Phase II, Part 2 | June 10, 2002 through June 26, 2002 |
| • Backfill and Site Grading | June 19, 2002 through June 28, 2002 |
| • Demobilization | June 27, 2002 through June 28, 2002 |
| • Plant Grasses (separate contract) | July 9, 2002 through July 12, 2002 |
- For project scheduling purposes the PDS and the report (PDSR) were separated into 3 distinct sections:
 - Phase 1 covered Building 886 exterior, Building 875 exterior, Building T886A interior and exterior, 888A Transformer slab and wall exterior, and the Building 886 interior office area (Rooms 106, 111, 116 through 123, 125, and 127 through 131).
 - Phase 2, Part 1, covered the Building 886 interior lab area (Rooms 101 through 104, 107 through 110, 112 through 115, 126, 126A, 126B, 140, and 141), and the above ground portion of the tunnel to the west of Building 886.
 - Phase 2, Part 2, covered Building 875, the below grade portion of the tunnel to Building 875, Building 880, and the 828 Pit.

XI. Final Disposition of Wastes

See Section VII.

XII. Next Steps for 886 Cluster

None, project has been completed including environmental restoration and planting native grasses on the former site of the 886 Cluster.

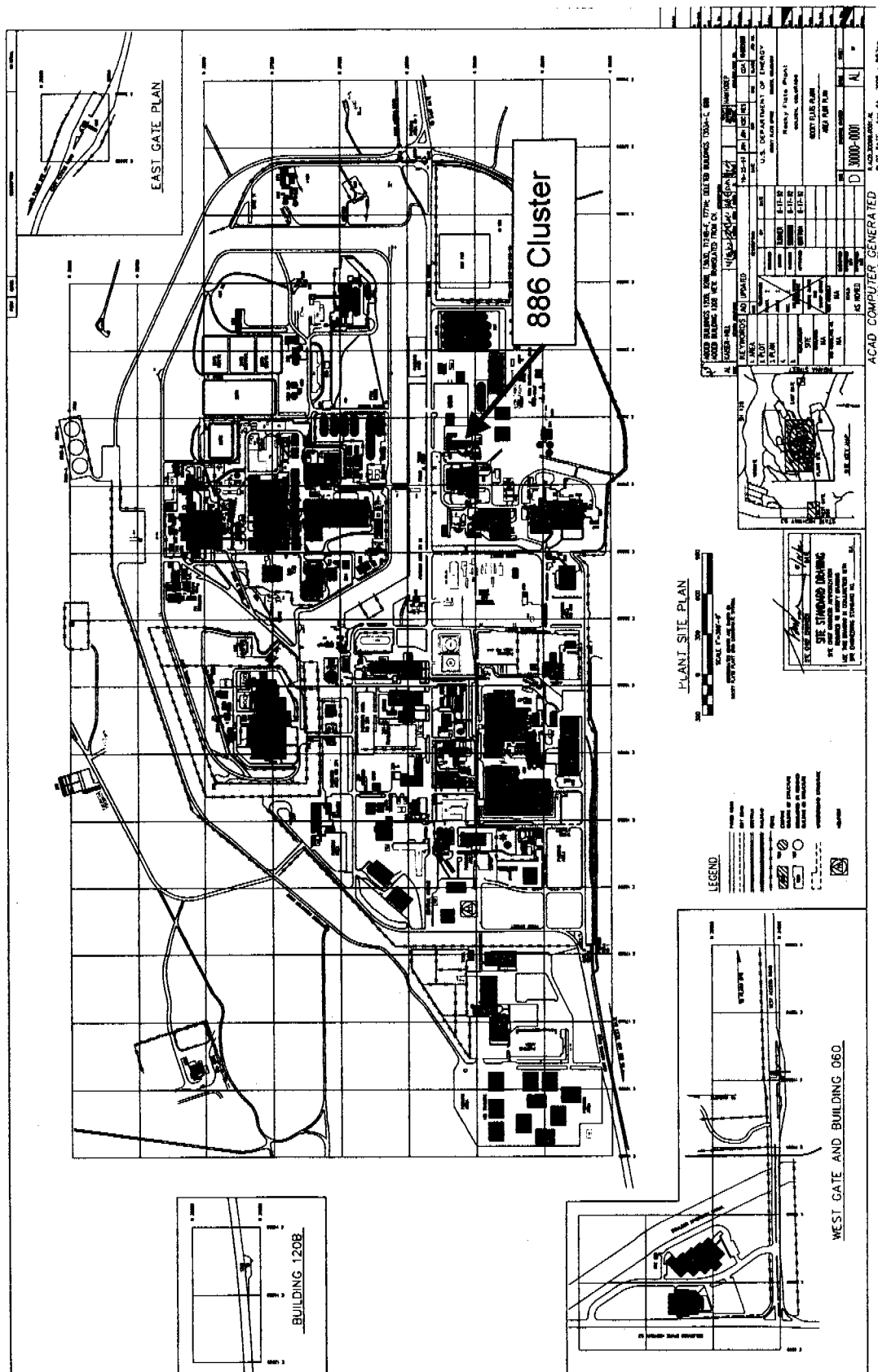


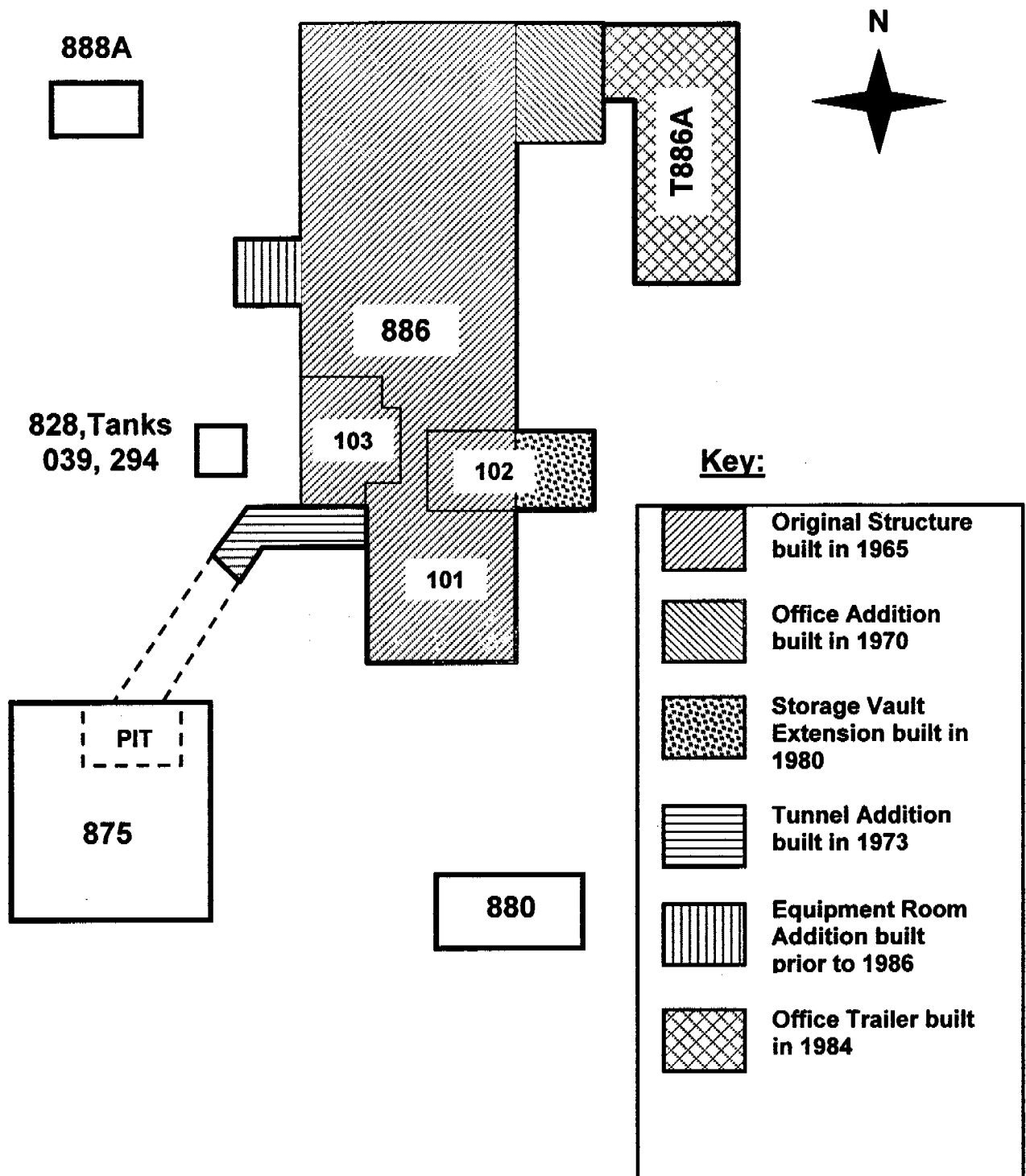
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COMPANY

Appendix 1

Article 1 RFETS Area Plot Plan

Article 2 886 Cluster Plot Plan





886 Cluster Plot Plan

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Appendix 2

- | | |
|------------------|---|
| Article 1 | Contact Record, March 13, 2002
Begin Demolition North Side, 886 |
| Article 2 | Contact Record, April 1, 2002
Continue Demolition, North Side, 886 |
| Article 3 | Contact Record, March 22, 2002
Discontinue Removing Floor, Room 101, 886 |
| Article 4 | Contact Record, March 20, 2002
Leave Pit Slab in Place, Room 103, 886 |
| Article 5 | Demolition Work Control Plan, Bldg. 886
Removal Joists, Decking, Room 103 |
| Article 6 | Contact Record, April 1, 2002
Place Concrete in Site Rubble Pile |
| Article 7 | Contact Record, May 17, 2002
Removal and Disposition of 828 Pit |
| Article 8 | Contact Record, June 19, 2002
Demolition of Building 880 |

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE REGULATORY CONTACT RECORD

Date/Time: March 13, 2002

Site Contact(s): Steve Tower, DOE / RFFO
Curtis Bean, K-H
Kurt Kehler, K-H
J.R. Marschall, K-H
Steve Nesta, K-H
Duane Parsons, K-H
Rich Seagoe, K-H Construction

Phone: (303) 966-2372

Regulatory Contact: Dave Kruchek, CDPHE **Phone:** (303) 692-3328
Steve Tower, RFFO (303) 966-2133

Agency: Colorado Department of Public Health and Environment

Purpose of Contact: CDPHE approval to begin demolition on the north side of Bldg. 886, including T886A, to a point in the building no further south than the north wall of Room 140.

Discussion

Kaiser-Hill, LLC, requests a minor change to how the IM/IRA is executed. Since the north side of Bldg. 886 was not contaminated with radiological or chemical contaminants demolition is now planned for that part of the facility ahead of the south side and completion of the final formal PDSR. All surfaces that will become exposed to the atmosphere as a result of this demolition have been found clean through Preliminary Demolition Surveys.

The north section of Bldg. 886 to rooms 103, 104, and 112 has had all radiological PDS surveys performed and that section of the facility meets unrestricted release criteria for the on-site storage in the rubble pile or off-site shipment to Erie Landfill. The facility is on an IHSS and radiological surveys will be performed when the concrete floor and foundations are removed and prior to shipment to either the rubble pile or the Erie Landfill.

All asbestos in that area of the facility has been abated and clearance samples show that no further action is required. A temporary wall of wood and plastic has been constructed just north of Room 112 and extends across Room 104 and ties into the wall of Room 103. The temporary wall is attached at both floor and ceiling to act as a barrier to prohibit demolition debris and dust from getting to the south end of the facility. A line has been painted west to east across the floor at the approximate location of the north wall of Room 140 to mark the end of the demolition prior to formal submittal and approval of the PDSR for the entire facility.

Contact Record Prepared By: J.R. Marschall, K-H

Required Distribution:

R. DiSalvo, RFFO
S. MacLeod, RFFO
J. Legare, RFFO
N. Newell, CDPHE
S. Gunderson, CDPHE
T. Rehder, USEPA
P. Arnold, K-H 371
J. Berardini, K-H MS
C. Deck, K-H
C. Gilbreath, K-H 771
T. Hopkins, K-H 776
S. Nesta, K-H RISS

G. Scott, K-H
D. Shelton, K-H
K. North, K-H ESS
A. Rosenman, K-H ESS
J. Mead, K-H ESS
J. Dischinger, RFCSS
D. Johnson, K-H ESS
CERCLA AR

Additional Distribution:

Dave Kruchek, CDPHE
Steve Tower, RFFO
Curtis Bean, K-H RISS
Dyan Foss, K-H RISS
Kurt Kehler, K-H RISS
J.R. Marschall, K-H RISS
Kim Myers, K-H RISS
Duane Parsons, K-H RISS
Rich Seagoe, KHC

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE REGULATORY CONTACT RECORD

Date/Time: 4-1-02 / 15:00

Site Contact(s): JR Marschall
Phone: 303-966-2372

Regulatory Contact: D. Kruchek Steve Tower
Phone: 303-692-3328 303-966-2133

Agency: CDPHE DOE/RFFO

Purpose of Contact: CDPHE / RFFO approval to continue the demolition of the north side of Bldg. 886 to near the former MAA of the building.

Discussion

In a meeting on 4-1-02 to discuss the PDSR for Bldg. 886 J.R. Marschall requested permission to continue the demolition of the north side of Bldg. 886 prior to formal approval of the PDSR. The demotion would proceed from the painted line at the approximate location of the north wall of room 140 to a point about 3 to 5' north of the temporary bulkhead, built to prohibit dust and debris from migrating into the south part of the building, and the north wall of room 103.

Mr. Kruchek and Mr. Tower agreed that the demolition could continue as stated, but that any further demolition would wait until formal approval of the PDSR.

Contact Record Prepared By: J.R. Marschall

Required Distribution:

R. DiSalvo, RFFO
S. MacLeod, RFFO
J. Legare, RFFO
S. Tower, RFFO
N. Newell, CDPHE
D. Kruchek, CDPHE
S. Gunderson, CDPHE
T. Rehder, USEPA
P. Arnold, K-H 371

G. Scott, K-H
D. Shelton, K-H
K. North, K-H ESS
A. Rosenman, K-H ESS
J. Mead, K-H ESS
J. Dischinger, RFCSS
D. Johnson, K-H ESS

Additional Distribution:

JR Marshall, K-H
K. Myers, K-H
D. Parsons, K-H
C. Randall, KHC
R. Seagoe, KHC

J. Berardini, K-H MS
C. Deck, K-H
C. Gilbreath, K-H 771
T. Hopkins, K-H 776
S. Nesta, K-H RISS

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE REGULATORY CONTACT RECORD

Date/Time: March 22, 2002 / 9:00am

Site Contact(s): Steve Tower, DOE/RFFO
J.R. Marschall, K-H
Duane Parsons, K-H
Richard Seagoe, K-H Construction
James Smith, Bartlett

Phone: (303) 966-2372

Regulatory Contact: Dave Kruchek, CDPHE **Phone:** (303) 692-3328
Steve Tower, RFFO (303) 966-2133

Agency: Colorado Department of Public Health and Environment
Department of Energy, Rocky Flats Field Office

Purpose of Contact: CDPHE / RFFO approval to discontinue removing the floor in Room 101, Bldg. 886, and cover remaining floor with additional fixative, cardboard, and steel plate bolted to the concrete.

Discussion

The original concept to mitigate radiological contaminated concrete in Room 101 was to cut the concrete into blocks (2000 lbs/ea) with a concrete saw, and remove them from the room with the existing overhead crane and a forklift. They would then be put in a LLW SCO container and shipped to the Nevada Test Site. Most of the concrete floor in the room was handled in that matter, but in areas where the old trench existed the floor was simply too thick for the largest saw blade to cut through, in excess of 24". At that point it was decided to leave the blocks containing the trench in place and cover them with 1/4" steel plate bolted to the blocks to avoid damage to the blocks during building demolition. The trench area consisted of an area down the center of the room approximately 35' long and 4' wide, an area across the northeast corner of the room approximately 15' long by 8' wide, and an area near the southeast section of the room approximately 10' long by 8' wide. When the blocks are exposed again during the building demolition, they will be carefully removed, any loose pieces picked up and put in an LLW SCO.

This plan was discussed with Dave Kruchek, CDPHE, and Steve Tower, RFFO. Dave requested that he visit the site and see exactly which pieces of concrete would be affected by the change. Dave came out on Friday, March 22, and reviewed the change with Duane Parsons, Jim Smith, Rich Seagoe, and J.R. Marschall. Dave requested that in addition to the steel plates bolted to the blocks that we respray the blocks with "CC" fixative and put cardboard between the concrete and the steel. That was agreed to and Dave gave his verbal approval to proceed with the work.

Contact Record Prepared By: J.R. Marschall

Required Distribution:

R. DiSalvo, RFFO
S. MacLeod, RFFO
J. Legare, RFFO
N. Newell, CDPHE
S. Gunderson, CDPHE
T. Rehder, USEPA
P. Arnold, K-H 371
J. Berardini, K-H MS
C. Deck, K-H
C. Gilbreath, K-H 771
T. Hopkins, K-H 776
S. Nesta, K-H RISS

G. Scott, K-H
D. Shelton, K-H
K. North, K-H ESS
A. Rosenman, K-H ESS
J. Mead, K-H ESS
J. Dischinger, RFCSS
D. Johnson, K-H ESS

Additional Distribution:

Dave Kruchek, CDPHE
Steve Tower, RFFO
Kurt Kehler, K-H
J.R. Marschall, K-H
Duane Parsons, K-H
Richard Seagoe, KHC
James Smith, Bartlett

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE REGULATORY CONTACT RECORD

Date/Time: 03/20/2002/ 1300

Site Contact(s): JR Marschall
Phone: 303-966-2372

Regulatory Contact: D. Kruchek Steve Tower
Phone: 303-692-3328 303-966-2133

Agency: CDPHE DOE/RFFO

Purpose of Contact: CDPHE / RFFO approval to an alternate method from that proposed in the RSOP notification letter (02-DOE-00108) that would leave the slab of the pit in room 103, Bldg. 886, in place along with the piping that is imbedded in the walls and floors of room 103 during building demolition.

Discussion

During the weekly meeting held with DOE and CDPHE it was discussed that the pit floor in room 103 will not be removed (except for two areas of approximately 2' x 1' where the sampling was conducted), because sampling demonstrated this floor meets the free release criteria for uranium limits. This contact record is documentation of an alternative measure for dealing with the slab than what was proposed in the RSOP Notification letter that stated the 103 pit slab would be removed prior to building demolition.

Additionally, it was discussed that there are imbedded lines in the floors and the north wall that have been filled with a resin material. Since it was not possible to survey these lines in totality they will be considered low level waste. Prior to demolition the area of these lines will be painted with a highly visible paint so that during demolition care may be taken not to rupture these lines and they and the concrete immediately surrounding them can be segregated from the rest of the building and dispositioned as LLW.

Mr. Kruchek agreed with the alternative method of leaving the pit floor in place based on the analytical results that were provided, and with leaving the piping in place during building demolition.

Contact Record Prepared By: K. L. Myers

Required Distribution:

R. DiSalvo, RFFO
S. MacLeod, RFFO
J. Legare, RFFO
S. Tower, RFFO
N. Newell, CDPHE
D. Kruchek, CDPHE
S. Gunderson, CDPHE
T. Rehder, USEPA
P. Arnold, K-H 371
J. Berardini, K-H MS
C. Deck, K-H
C. Gilbreath, K-H 771
T. Hopkins, K-H 776
S. Nesta, K-H RISS

G. Scott, K-H
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K. North, K-H ESS
A. Rosenman, K-H ESS
J. Mead, K-H ESS
J. Dischinger, RFCSS
D. Johnson, K-H ESS

Additional Distribution:

JR Marshall, K-H
K. Myers, K-H
D. Parsons, K-H
C. Randall, KHC
R. Seagoe, KHC

**Demolition Work Control Plan, Bldg 886
Removal Joists/Decking, Room 103**

Note: all work will be done in accordance with the 886 Cluster D&D Plan, a specific JHA and RWP. All removal work will be performed under constant RCT coverage, who will continually perform radiological air and surface contamination monitoring.

1. Spray the ceiling and roof joists with radiological lockdown fixative.
2. Remove and/or decontaminate all wall and floor surfaces in Room 103 to below free release limits.
3. Perform PDS on all wall and floor surfaces in Room 103.
4. Cover all wall and floor surfaces with reinforced plastic.
5. Provide temporary exhaust ventilation to Room 103 to provide negative draw into Room 103 during roof removal.
6. Construct handrail on the roofline as fall safety protection.
7. Remove and dispose of the top layer of built-up roofing system as sanitary waste (i.e., all roofing material except for the metal corrugated decking and metal bar joints that are visible inside Room 103). Radiation monitoring will be performed while removing the roofing to assure that there is no contamination between the top of the metal decking and the built-up roofing.
8. Cover exposed roofing with reinforced plastic and cut holes in parapet to allow drainage. Note: this step is only necessary if there is a delay between Steps 7 and 9.
9. Layout the precision cuts on the topside of the corrugated metal decking. Cuts will be made such that two joists and the corrugated metal decking between them are removed as a unit. Holes will be cut in the metal decking at four points to secure rigging around the joists for lifting.
10. Install catch basins under the joists where they will be cut to capture the saw cuttings. Note: Radiological contamination has only been identified on the metal bar joists. The corrugated roofing has been surveyed and one spot was found to be slightly above free release limits. However, the entire inside of the roof has been sprayed with fixative. Cut ends of the bar joists will be tapped or sprayed with fixative to encapsulate any potential for newly exposed contamination.
11. A temporary, plastic-lined, bermed area will be built to the west of Room 103 or in B880 such that the joist/decking units can be lowered into the berm and cut in half to fit into a 20' top loading cargo container (rear loading cargo if top loading cargo is not available). At this step only the bar joists will need to be cut utilizing the radiological controls (i.e., taping or fixating the ends, localized ventilation and/or wetting methods, air and surface sampling). Note: this step will not be necessary if 40' cargo containers are available – see below for 40' cargo loading steps.
12. Make saw cuts with Sawsall in the metal corrugated decking as laid out in step 9 above, taking care not to cut into the joists.
13. Once all decking is cut, cut rigging holes around the metal bar joists as laid out in step 9 above, taking care not to cut the joists.
14. Rig the crane to the first set of joists/decking to be removed, assuring that the riggers and workers stand on portions of the roof area not being removed. Move the joists/decking to the bermed area. Note: If wind speed exceeds 10 mph

Radiological Safety or Industrial Safety shall evaluate if work should continue.
Either organization may stop work based on conditions.

15. Continue removal of the remaining joists/decking sets in the above manner.
16. During and after completion of roof removal, clean up all cuttings and dispose of as low level waste.
17. Survey plastic wall and floor covering to verify no spread of contamination.
18. Dispose of plastic as low level waste or sanitary as necessary.
19. Perform a confirmatory Pre-Demolition Survey of the bare walls and floor to confirm no contamination was spread (i.e., smear survey).

40 Foot Cargo Loading Steps

Following the steps below if 40' cargo containers are to used for waste shipment:

1. Lift a set of joists/decking onto a staging area located west of Room 103.
2. With forklifts, move the joist/decking units into the 40' cargo container.
3. Repeat this operation for each of the joists/decking units.
4. During and after completion of staging, clean-up area staging area, perform radiological air and surface sampling, and dispose of any waste as LLW or sanitary waste as appropriate.

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE REGULATORY CONTACT RECORD

Date/Time: 4-1-02 / 15:00

Site Contact(s): JR Marschall
Phone: 303-966-2372

Regulatory Contact: D. Kruchek Steve Tower
Phone: 303-692-3328 303-966-2133

Agency: CDPHE DOE/RFFO

Purpose of Contact: CDPHE / RFFO approval to place clean concrete rubble meeting free release criteria into the site rubble pile.

Discussion

In a meeting on 4-1-02 to discuss the PDSR for Bldg. 886 J.R. Marschall requested permission to place that concrete from the Bldg. 886 concrete or block walls, slabs and foundations meeting free release criteria onto the site rubble pile. Concrete blocks from the floor of room 101 that were left in place after being painted with fixative and covered with cardboard and steel plates bolted to the blocks do not meet the free release criteria and will be placed in SCO containers for shipment to a proper disposal site. The removal of the rest of the slab and foundations in Bldg. 886 will be monitored by an RCT and any that do not meet free release criteria will also be placed in the SCO container(s).

Mr. Kruchek and Mr. Tower agreed with placing concrete walls, slabs and foundations meeting free release criteria onto the site rubble pile.

Contact Record Prepared By: J.R. Marschall

Required Distribution:

R. DiSalvo, RFFO	G. Scott, K-H
S. MacLeod, RFFO	D. Shelton, K-H
J. Legare, RFFO	K. North, K-H ESS
S. Tower, RFFO	A. Rosenman, K-H ESS
N. Newell, CDPHE	J. Mead, K-H ESS
D. Kruchek, CDPHE	J. Dischinger, RFCSS
S. Gunderson, CDPHE	D. Johnson, K-H ESS

Additional Distribution:

JR Marshall, K-H
K. Myers, K-H
D. Parsons, K-H
C. Randall, KHC
R. Seagoe, KHC

T. Rehder, USEPA
P. Arnold, K-H 371
J. Berardini, K-H MS
C. Deck, K-H
C. Gilbreath, K-H 771
T. Hopkins, K-H 776
S. Nesta, K-H RISS

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE REGULATORY CONTACT RECORD

Date/Time: 5-17-02 / 1:00

Site Contact(s): JR Marschall
Phone: 303-966-2372

Regulatory Contact: D. Kruchek Steve Tower
Phone: 303-692-3328 303-966-2133

Agency: CDPHE DOE/RFFO

Purpose of Contact: To record method of removal and disposition of the 828 Pit in the 886 Cluster D&D Project.

Discussion

Over the last several weeks there has been several discussions regarding removal and disposition of the 828 Pit. At the meeting on April 23, 2002, after discussion regarding elevated count of the water that had seeped into the pit it was decided that the entire pit would be removed and not just the top three (3) feet. Since the entire pit would be removed and free released (if possible) it was agreed that it would no longer be necessary to perform a PDS or to include the 828 Pit in the final PDSR for the project.

It was determined that, in addition to radiological samples inside the pit, Radiological Technicians would do a 100% survey on the underside of the bottom of the pit and the earthen side of the bottom 6' of the walls, and a 30% survey on the earthen side of the remainder of the walls. If no contamination was found then a PRE would be written and the concrete would be sent to the site rubble pile. It was further determined that Environmental Restoration (ER) would review the location of the HEUN and Process Waste lines that went in the pit for signs of leakage and take samples of the soil under the pipes. ER would also sample the soil under the pit prior to backfill. If elevated levels of contamination was not found then the area could be backfilled with clean dirt. Elevated levels of contamination would have required proper disposition of the contaminated dirt.

On May 16 in a telephone conversation with J.R. Marschall, Dave Kruchek also gave permission to remove the pit in as large of pieces as possible, put it on the surface and allow it to dry before performing the radiological surveys. Also on May 16 the pit was removed as above and ER took under-slab samples of the dirt as discussed; however, the

concrete was so poor that it came out in the consistency of "oatmeal". This made the 100% survey for radiological contamination on the underside of the bottom of the pit impractical and it was decided by the Project Team to take environmental samples of the floor to determine radioactivity. The large pieces of the pit walls were allowed to dry out and Radiological Operations scanned 100% of the surfaces and took (30) point samples. The pit area was not to be backfilled until all samples results were known. The radiological scans and point samples of the walls and the environmental samples taken of the earth under the HUEN lines, process waste lines, and under the pit floor were all below Tier II levels. Late in the day of May 21, the project was given approval by Environmental Restoration to backfill the pit area which was accomplished on May 22 using clean dirt. None of the concrete was found to be contaminated and the majority of the rubble from the pit was put in the on-site rubble pile with a small percentage of the pit (mostly rebar) sent to the Erie landfill.

Contact Record Prepared By: J.R. Marschall

Required Distribution:

R. DiSalvo, RFFO
S. MacLeod, RFFO
J. Legare, RFFO
S. Tower, RFFO
N. Newell, CDPHE
D. Kruchek, CDPHE
S. Gunderson, CDPHE
T. Rehder, USEPA
P. Arnold, K-H 371
J. Berardini, K-H MS
C. Deck, K-H
C. Gilbreath, K-H 771
T. Hopkins, K-H 776
S. Nesta, K-H RISS

G. Scott, K-H
D. Shelton, K-H
K. North, K-H ESS
A. Rosenman, K-H ESS
J. Mead, K-H ESS
J. Dischinger, RFCSS
D. Johnson, K-H ESS

Additional Distribution:

JR Marshall, K-H
K. Myers, K-H
D. Parsons, K-H
C. Randolph, KHC
R. Seagoe, KHC
A. Primrose, KH

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE REGULATORY CONTACT RECORD

Date/Time: 6-19-02 / 1:00

Site Contact(s): JR Marschall
Phone: 303-966-2372

Regulatory Contact: D. Kruchek Steve Tower
Phone: 303-692-3328 303-966-2133

Agency: CDPHE DOE/RFFO

Purpose of Contact: To record approval for the demolition of Bldg. 880 in the 886 Cluster D&D Project.

Discussion

On June 19, 2002, at the weekly status meeting with CDPHE and DOE on the 886 Cluster Demolition Project, Dave Kruchek gave approval to begin the demolition of Building 880. He did this after receiving and reviewing all the radiological sampling reports on Building 880. That data and the narrative on Building 880 will be included in the PDSR due to be completed on June 26.

Contact Record Prepared By: J.R. Marschall

Required Distribution:

R. DiSalvo, RFFO
S. MacLeod, RFFO
J. Legare, RFFO
S. Tower, RFFO
N. Newell, CDPHE
D. Kruchek, CDPHE
S. Gunderson, CDPHE
T. Rehder, USEPA
P. Arnold, K-H 371
J. Berardini, K-H MS
C. Deck, K-H
C. Gilbreath, K-H 771
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D. Shelton, K-H
K. North, K-H ESS
A. Rosenman, K-H ESS
J. Mead, K-H ESS
J. Dischinger, RFCSS
D. Johnson, K-H ESS

Additional Distribution:

JR Marshall, K-H
D. Parsons, K-H
C. Randolph, KHC
R. Seagoe, KHC

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Appendix 3

Pre-Demolition Survey Report (PDSR)

- Article 1 Phase 1**
886 Exterior, 875 Exterior and Interior Office Area (Rooms 106, 111, 116 through 123, 125, and 127 through 131), T886A Interior and Exterior, 888A Transformer Slab and Wall Exterior
- Article 2 Phase 2, Part 1**
886 Interior Lab Area (Rooms 101 through 104, 107 through 110, 112 through 115, 126, 126A, 126B, 140, and 141) and the Above Ground Portion of the Tunnel to the West of 886
- Article 3 Phase 2, Part 2**
875, the Below Grade Portion of the Tunnel to 875, 880, and the 828 Pit

**PDSR's Previously
Submitted to
Administration Records
By
Duane Parsons**

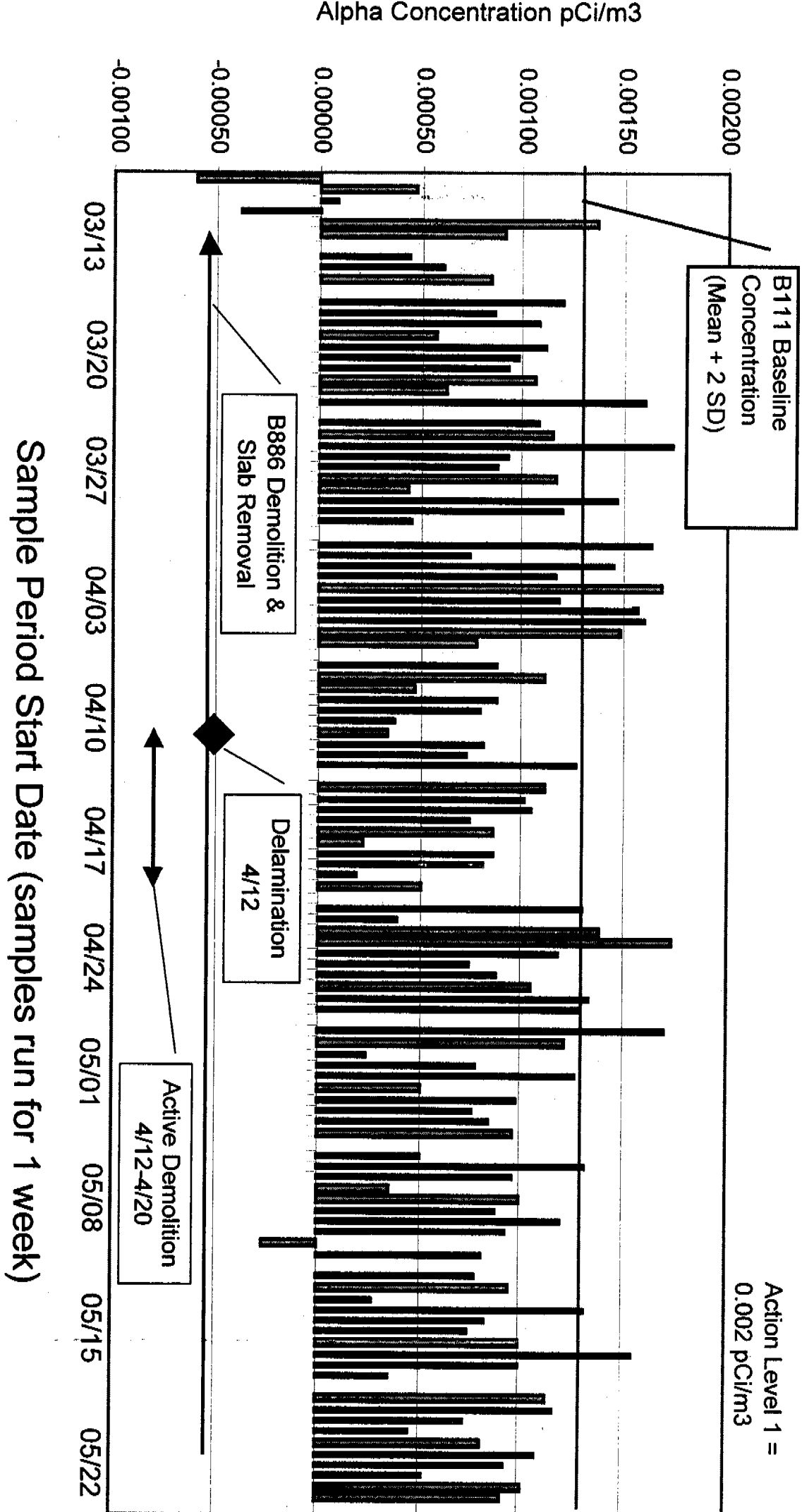


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Appendix 4

- Article 1 B886 Demolition PM-Rad Results**
- Article 2 Performance Monitoring for Radionuclides
Network (map)**

Figure 1. B886 Demolition PM-Rad Results







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Appendix 5

- Article 1 Notification of Removal of Contaminated Slab, 886**
Letter, January 30, 2002 (Legare to Gunderson), 2 pgs.
- Article 2 Concurrence to Removal Contaminated Slab, 886**
Letter, January 31, 2002 (Gunderson to Legare), 1 pg.
- Article 3 Notification for Explosive Demolition, 886**
Letter, April 4, 2002 (Legare to Gunderson), 4 pgs.
- Article 4 Concurrence for Explosive Demolition, 886**
Letter, April 8, 2002 (Gunderson to Legare), 1 pg.

RECEIVED



CORRESPONDENCE
CONTROL

JAN 30 2002

JOE ORDER # NONE

Page 1 of 2


Mr. Steven H. Gunderson
02-DOE-00108

2

JAN 30 2002

The building shell will be breached during component removal activities, hence the six-part analysis required under Section 3.8 of the RSOP is included in the enclosure. Questions can be directed to Steve Tower, Acting Manager of Projects, Rocky Flats Field Office at (303) 966-2133.

Sincerely,



Joseph A. Legare
Assistant Manager
for Environment and Stewardship

Enclosure

cc w/o Encl:
S. Tower, AMP, RFFO
F. Gibbs, K-H
B. Steward, K-H
D. Foss, K-H
T. Rehder, EPA

cc w/Encl:
Building 850 Administrative Record

STATE OF COLORADO

Bill Owens, Governor
Jane E. Norton, Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

4300 Cherry Creek Dr. S.
Denver, Colorado 80246-1530
Phone (303) 692-2000
TDD Line (303) 691-7700
Located in Glendale, Colorado

<http://www.cdphe.state.co.us>

Laboratory and Radiation Services Division
8100 Lowry Blvd.
Denver, Colorado 80230-6928
(303) 692-3090



Colorado Department
of Public Health
and Environment

January 31, 2002

Mr. Joseph A Legare
Assistant Manager for Environment and Infrastructure
U.S. Department of Energy, Rocky Flats Field Office
10808 Highway 93, Unit A
Golden, CO 80403-8200

RE: Building 886 notification of intent to invoke the Facility Component Removal, Size Reduction, and Decontamination Activities RSOP (Component RSOP) for removal of the contaminated slab - concurrence

Dear Mr. Legare:

The Colorado Department of Public Health and Environment, Hazardous Materials and Waste Management Division has received your January 30, 2002 letter, received on January 22, 2002, notifying us of your intent to utilize the Component RSOP for removal of contaminated portions of the Building 886 slab prior to demolition of the facility. Based on the information provided and discussed, we hereby concur that the appropriate activities may proceed utilizing the Component RSOP.

As indicated in your letter the consultative process will be utilized to provide information, including the Work Control Documents, as well as to keep us informed of the decommissioning strategy or any changes thereto prior to performing these or other decommissioning activities.

If you have any questions regarding this correspondence please contact me at (303) 692-3367 or David Kruchek at (303) 692-3328.

Sincerely,

Steven H. Gunderson
RFCA Project Coordinator

cc: Steve Tower, RFFO Frank Gibbs, KH
Tim Rehder, EPA Dave Shelton, KH
Kent Dorr, KH Dyan Foss, KH
Administrative Records Building 850

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Final Project Closeout Report
886 Cluster Closure Project
Appendix 5, Article 3

Revised 02/02

CORRES. CONTROL
INCOMING LTR NO.

00234 RF02

DUE DATE
ACTION



Department of Energy

ROCKY FLATS FIELD OFFICE
10808 HIGHWAY 93, UNIT A
GOLDEN, COLORADO 80403-8200

APR 04 2002

RECEIVED

2002 APR -9 P 1:54

CORRESPONDENCE
CONTROL

02-DOE-00527

Mr. Steven H. Gunderson
Rocky Flats Cleanup Agreement Coordinator
Colorado Department of Public Health and Environment
4300 Cherry Creek Drive South
Denver, CO 80246-1530

Dear Mr. Gunderson:

Please find enclosed a completed Rocky Flats Cleanup Agreement Standard Operating Protocol (RSOP) for Facility Disposition notification form for Building 886 explosive demolition.

In accordance with the Facility Disposition RSOP, this letter and it's enclosure are notification for RSOP implementation. This notification is for all activities required to structurally weaken the thick concrete walls and ceiling of Room 101 in Building 886 using explosives making mechanical demolition of the structure more economic and safe.

The process planned for use on the four and five-foot thick concrete walls and two-foot thick concrete ceiling will undergo explosive harmonic delamination. Harmonic delamination is a process employed by Controlled Demolitions Incorporated (CDI), a world class explosive demolition firm, whereby closely timed small explosion are used to vibrate a structure such that the cohesion of the portland cement matrix and the reinforcing steel and aggregate is loosened making mechanical demolition much easier. The structure will probably remain standing after delamination.

Please find enclosed in addition to the notification form, a schedule, and an evaluation of demolition methods that provide greater detail.

The stakeholders have been notified in both the December and March Environmental Restoration and Decontamination and Decommissioning meetings of the planned use of explosives, and a workshop going over the evaluation of demolition methods was held with the stakeholders in January. No adverse comments were received.

In that the planned shot is scheduled for April 12, 2002, expedited review and comment is requested. Questions can be directed to Steve Tower at (303) 966-2133.

Sincerely,

Joseph A. Legare

Joseph A. Legare
Assistant Manager
for Environment and Stewardship

DIST.	LM	SEC
BOGGS, M. V.	X	X
BROWN, E.	X	X
BRAUNFORD, M.D.	X	X
BURNS, T. F.	X	X
DECK, C. A.	X	X
DEGENHART, K.	X	X
DIETZ, E. S. F.	X	X
FERRELL, D. W.	X	X
FERN, M. S.	X	X
GERMAN, A. L.	X	X
GILCOMB, J.	X	X
HALL, L.	X	X
ISCAL, J. H.	X	X
MARTIN, L. A.	X	X
MCMILLIN, J.	X	X
MORRIS, V.	X	X
PARKER, A. M.	X	X
POWERS, K.	X	X
RAY, R. D.	X	X
RODGERS, A. D.	X	X
SCOTT, G. K.	X	X
SHULTON, D. C.	X	X
SPRAYS, M. S.	X	X
THICE, K. D.	X	X
TUCKER, N. R.	X	X
VOORHEES, G. M.	X	X
WILLIAMS, J. I.	X	X
WILHE, F.	X	X
WINDSHILL, S.	X	X
WYCK, K.	X	X
WYCK, L.	X	X

COR. CONTROL	X	X
ADMIN. RECORD	X	X
PAT/CH	X	X

Reviewed for Addressee
Corres. Control RFP

4/9/02
Date By *leg*

Ref. Ltr. #

DOE ORDER #

NONE

Enclosures

Mr. Steven H. Gunderson
02-DOE-00527

2

APR 04 2002

cc w/o Encls:
S. Tower, AMP, RFFO
F. Gibbs, K-H
J. Marshall, K-H
K. Myers, K-H
T. Rehder, EPA

cc w/Encls:
T130G Administrative Record

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RSOP for Facility Disposition Checklist

Project scope: Buildings 886 Room 101					
Facility description: Building 886 Room 101					
Description of planned activity(ies): Structural weakening of Building 886 room 101 with the use of Harmonic Delamination Explosives					
Facility/rooms/beta/areas involved: Building 886, Room 101					
Is RCRA unit closure(s) part of the planned activity?					
If RCRA units are included, attach unit specific information sheets and drawings					
<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
RLCR Status	<input checked="" type="checkbox"/> RLCR complete and concurrence received: 12/24/1997 <input type="checkbox"/> RLCR initiated but incomplete; concurrence anticipated: <input type="checkbox"/> RLC has not been initiated ¹ and is scheduled for initiation on:				
If RLCR is not complete or initiated, what data will be used to plan the work activities?					
Activity requires modification to the ARARs listed in the RSOP.					
<input type="checkbox"/> Yes, attach to letter <input checked="" type="checkbox"/> No					
Attach Administrative Record file requirements for the activity.					
Point of contact for each facility/activity: J.R. Marshall, 303-966-2372					
Duration of work activities: One week Anticipated work start: 4/12/02					
Attach schedule for each facility or activity for information purposes. -					
Does the activity involve removing contaminated portions of the building shell? Include a description of the activity, contamination levels and controls					
<input type="checkbox"/> Yes, LRA consultation and concurrence required <input checked="" type="checkbox"/> No					
Are there deviations/exceptions to the RSOP for the proposed activity(ies)?					
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
Provide an explanation of deviation/exception to the RSOP: Not applicable					
C. Check the appropriate resulting action box below					
Additional RFCA decision document required:					
Major modification to RSOP	Field change to RSOP				
Minor modification to RSOP	LRA consultation				
Activity(ies) will result in the following waste types					
<input checked="" type="checkbox"/> Process waste <input checked="" type="checkbox"/> Remediation waste					
TRU	LLW	LLMW	Haz.	Sanitary	Other: Concrete generated from this activity meets the definition of free-releasable as defined in the Concrete RSOP
LRA Notification Review Time		<input checked="" type="checkbox"/> 14 days, no RCRA unit closure involved <input type="checkbox"/> 30 days, RCRA unit closure involved			

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Administrative Record Requirements for this Activity

- Final Rocky Flats Cleanup Agreement (RFCA)
- RFETS Decommissioning Program Plan (DPP)
- RFCA Standard Operating Protocol for Facility Disposition
- Reconnaissance Level Characterization Report for the 886 Cluster Decommissioning Project
- Building 886 Interim Measure/ Interim Remedial Action Plan
- Notification Letter and attachments and subsequent CDPHE correspondence, if appropriate

STATE OF COLORADO

Bill Owens, Governor
Jane E. Norton, Executive Director

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Laboratory and Radiation Services Division
8100 Lowry Blvd.
Denver, Colorado 80230-6928
(303) 692-3090



Colorado Department
of Public Health
and Environment

April 8, 2002

Joseph A. Legare
Assistant Manager for Environment and Infrastructure
Rocky Flats Environmental Technology Site
10808 Highway 93, Unit A
Golden, CO 80403-8200

Dear Mr. Legare:

The Hazardous Materials and Waste Management Division (the Division) of the Colorado Department of Public Health and Environment has received the Rocky Flats Cleanup Agreement Standard Operating Protocol (RSOP) for Facility Disposition notification form for Building 886 explosive demolition.

The Division would like to acknowledge receipt of the RSOP notification and would like to take this opportunity to reiterate an addition agreed to in a meeting with Steve Tower (DOE), J.R. Marshall (KH), Bob Magee (CDI), and David Kruchek (CDPHE) in a meeting that took place on April 3, 2002. It was agreed that geotextile fabric will also be draped over the roof of Building 886 before the detonation to bring down the roof. The fabric will be attached to the building and wetted in such a manner to minimize fugitive dust. Questions can be directed to David Kruchek at (303) 692-3328

Sincerely,



Steven H. Gunderson
RFCA Project Coordinator

cc: Steve Tower, DOE
Tim Rehder, EPA
Frank Gibbs, KH

Dave Shelton, KH
Administrative Records Building T130G

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